

I claim:

1. A resin system, comprising:
- (a) a water curable isocyanate functionalized prepolymer;
 - (b) a first catalyst chemically bound-in to said prepolymer; and
 - (c) a second catalyst soluble in water and insoluble in the prepolymer.
2. A resin system according to claim 1, wherein said first catalyst is covalently bound-in to the prepolymer.
3. A resin system according to claim 1, wherein said first catalyst comprises a mixture of ionically and covalently bound-in catalysts.

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4. A resin system according to claim 1, wherein said first catalyst comprises a tertiary amine catalyst.

5. A resin system according to claim 4, wherein the tertiary amine catalyst comprises a single chemical species.

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6. A resin system according to claim 1, wherein said first catalyst comprises less than 10 percent and at least 0.1 percent by weight of the resin system.

7. A resin system according to claim 4, wherein said tertiary amine catalyst is selected from the group consisting of:

(a) 1-(2-hydroxyethyl) pyrrolidine;

- (b) 1-methyl piperazine;
- (c) 1-methyl-2piperidine methanol;
- (d) 1,4-bis(2-hydroxyethyl)-2-methylpiperazine;
- (e) 2[2-(dimethylamino)ethyl] methyl amino ethanol;
- (f) gramine;
- (g) 3-morpholino-1,2-propanediol,
- (h) 1,4-bis(3-aminopropyl) piperazine;
- (i) tropine;
- (j) 3-aminopropyl morpholine;
- (k) 4,2-hydroxyethyl morpholine;
- (l) 3,3-diamino-N-methyl dipropylamine;
- (m) 1,4-bis(2-hydroxypropyl)-2-piperazine;
- (n) 1-(2-hydroxypropyl)imidazole;
- (o) 3-dimethyl amino propanol; and
- (p) β -hydroxy-4-morpholine propane sulphonic acid.

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8. A resin system according to claim 1, wherein said second catalyst comprises a solid inorganic catalyst.

9. A resin system according to claim 1, wherein said second catalyst includes a hydrophilic coating.

10. A resin system according to claim 1, wherein said second catalyst comprises less than 10 percent and at least 0.1 percent by weight of the resin system.

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11. A resin system according to claim 1, wherein the first and second catalysts comprise less than 7.5 percent by weight of the resin system.

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12. A resin system according to claim 1, wherein the first and second catalysts each comprise 2.5 percent by weight of the resin system.

13. A resin system according to claim 1, wherein said isocyanate functionalized prepolymer comprises an aliphatic isocyanate functionalized prepolymer.

14.

An orthopaedic splinting material, comprising:

- (a) a flexible substrate; and
- (b) a resin system impregnated in or coated on said substrate and including:
 - (i) a water curable isocyanate functionalized prepolymer;
 - (ii) a first catalyst chemically bound-in to said prepolymer; and
 - (iii) a second catalyst soluble in water and insoluble in the prepolymer.

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15.

An orthopaedic splinting material according to claim 14, wherein said resin system further comprises additives selected from the group consisting of fillers, pigments, fragrances, surfactants, lubricants, or mixtures thereof.

16. An orthopaedic splinting material according to claim 14, wherein said resin system comprises 30 to 80 percent by weight of said splinting material.

17. A method for treating an injury to a body part, comprising the steps of:

- (a) providing an orthopaedic splinting material, including
- (i) a flexible substrate; and
 - (ii) a moisture-curable resin system impregnated in or coated on said substrate and including a water curable isocyanate functionalized prepolymer, a first catalyst chemically bound-in to said prepolymer, and a second catalyst soluble in water and insoluble in the prepolymer;
- (b) exposing the substrate to moisture in an amount sufficient to activate the moisture-curable resin on the substrate; and
- (c) positioning said splinting material around the body part to be treated and maintaining the splinting material in a preselected position

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relative to the body part for a sufficient period of time for the splinting material to harden, whereby the splinting material hardens into a rigid supporting structure custom-fitted to the body part to be treated.

18.

A resin system, comprising a water curable, isocyanate functionalized prepolymer wherein the curing reaction is catalysed by a first chemically bound-in catalyst and a second not chemically bound-in catalyst:

- (a) said first catalyst comprising a tertiary amine catalyst selected from the group consisting of 1-(2-hydroxyethyl) pyrrolidine, 1-methyl piperazine, 1-methyl-2-piperidine methanol, 1,4-bis(2-hydroxyethyl) piperazine, 2[2-(dimethylamino)ethyl] methyl amino ethanol, gramine, 3-morpholino-1,2-propanediol, 1,4-bis(3-aminopropyl)piperazine, tropine, 3-aminopropyl morpholine, 4,2-hydroxyethyl morpholine, 3,3-diamino-

N-methyl dipropylamine, 1,4-bis(2-hydroxypropyl)-2-methyl piperazine, 1-(2-hydroxypropyl)imidazole, 3-dimethyl amino propanol, and β -hydroxy-4-morpholine propane/sulphonic acid;

(b) said second catalyst is soluble in water and insoluble in said prepolymer; and

(c) the first and second catalysts together show a synergistic effect whereby the reaction rate between water and the prepolymer is increased.

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A resin system comprising at least a water curable, isocyanate functionalized prepolymer, wherein the curing reaction is catalysed by a first chemically bound-in catalyst and a second not chemically bound-in catalyst being coated with a hydrophilic coating.